GLM Regression (Q5L6) Total Questions: 20

Most Correct Answers: #9 Least Correct Answers: #6

1. Poisson distribution is specified by

4/7 (A) 1 parameter
2/7 (B) 2 parameters
1/7 (C) 3 parameters
0/7 (D) Poisson distribution does not have parameters
0/7 (E) I do not know

2. The type of dependent variable in Poisson Regression is

1/7 (A) Integer
4/7 (B) Count
0/7 (C) Ratio
0/7 (D) Interval
0/7 (E) I do not know
2/7 (F) Binary

3. Overdispersion in Poisson Regression occurs when

5/7 (A) var(Y|X)>var(Y)
1/7 (B) var(Y|X)>mean(Y|X)
0/7 (C) Variance is decreasing
1/7 (D) I do not know

4. The model of Poisson Regression is

6/7 (A) ln(lambda)=e^(xb)
0/7 (B) ln(y)=e^(xb)
0/7 (C) ln(y)=e^(xb)/(1+e^(xb))
1/7 (D) ln(lambda)=e^(xb)/(1+e^(xb))
0/7 (E) I do not know

5. We can estimate Poisson Regression in R using function

0/7 A lm()

5/7 B glm()

0/7 C flm()

2/7 D poisson()

0/7 E I do not know

6. Which one of these is the measure for goodness of fit for Poisson Regression?(if any)

1/7 A Ordinal R^2

4/7 B Chi-square

0/7 C I do not know

1/7 D There are not measure for it

1/7 E Pseudo R^2

7. Which one of these is the correct interpretation of the coefficient of Poisson Regression?

2/7 A For a 1-unit increase in X, we expect a b1 unit increase in Y.

2/7 B For a 1-unit increase in X, we expect b1 percentage increase in Y.

3/7 C For a 1-percentage increase in X, we expect b1 percentage increase in Y.

0/7 D For a 1-percentage increase in X, we expect b1 unit increase in Y.

0/7 E I do not know

8. Count data is continuous

1/7 A Yes

6/7 B No

0/7 C I do not know

9. The logistic model is estimated by way of

1/7 A Ordinary least squares

6/7 B Maximum likelihood estimation

0/7 C Negative binomial distribution

0/7 D I do not know

10. As a result of estimation of coefficients

2/7 A We do not have the formula, an iterative algorithm must be used

2/7 B The explicit formula of coefficients exists

1/7 C I do not know

2/7 D We can obtain different values for coefficients

11. In Poisson regression...

2/7 A The asymptotic distribution of the maximum likelihood estimates is multivariate normal.

0/7 B The distribution of the maximum likelihood estimates is multivariate normal.

3/7 C The asymptotic distribution of the maximum likelihood estimates is multivariate Poisson distribution.

2/7 D I do not know

12. Pseudo R-Squared Measures are calculated based on (if any)

1/7 A The likelihood function

3/7 B Row residuals

0/7 C Deviance

0/7 D Chi-squared value

3/7 E I do not know

13. The formula for the raw residual is

5/7 A The difference between the actual response and the estimated value from the model

0/7 B The squared difference between the actual response and the estimated value from the model

2/7 C The difference between the actual response and the estimated value from the model by dividing by the standard deviation

0/7 D I do not know

14. Which of these is NOT the type of residuals

1/7 A Deviance Residual

1/7 B Pearson Residual

0/7 C Raw Residual

5/7 D Poisson Residual

0/7 E I do not know

15. In the case of intercept-only model

2/7 A The mean of the dependent variable equals the exponential value of intercept

0/7 B The mean of the dependent variable equals the intercept

5/7 C The mean of the dependent variable equals 0

0/7 D I do not know

16. ln(lambda) = 0.6 - 0.2* female [lamda = the average number of articles] Note: e^(-0.2)=0.78

3/7 A One unit increase in female brings a 0.2 decrease in ln(lambda).

2/7 B Being female decreases the average number of articles by 0.78 percent

2/7 C Being female decreases the average number of articles by 22%

0/7 D I do not know

17. While running the Poisson Regression we will have never faced with the value of lambda

3/7 A 0

1/7 B 1

2/7 C 2

1/7 D I do not know

18. Why does not quasi-Poisson model have AIC?

2/7 A Quasi-Poisson is used quasi-likelihood instead of log-likelihood estimates.

3/7 B Quasi-Poisson does not use iterative estimation

2/7 C I do not know

19. Why Poisson regression is called log-linear?

2/7 A Because we use a log link to estimate the logarithm of the average value of the dependent variable

0/7 B Because we use a log values of independent variable

5/7 C Because we use a log value of an independent variable is transformed to linear

0/7 D I do not know

20. **Formulate the Null hypothesis for chi-squared and deviance test.**

1/7 A The distance between actual and predicted values is insignificant

6/7 B The distance between actual and predicted values is 0

0/7 C There is a significant difference between actual and predicted values.

0/7 D I do not know